

Claims

[c1] 1.A brake system for a wheel comprising:
a plunger assembly adapted to mount to one side of the wheel, said plunger assembly including a plunger, a plunger housing and a brake pad assembly chamber in said plunger housing, said plunger movable in said plunger housing, said brake pad assembly chamber open towards the wheel, said plunger assembly including an axle opening adapted to receive an axle for the wheel;
a brake pad assembly movably mounted in said brake pad assembly chamber, said brake system configured such that movement of said plunger causes movement of said brake pad assembly in said brake pad assembly chamber, said brake pad assembly including an axle opening adapted to receive an axle for the wheel;
a spring which biases said brake pad assembly into said brake pad assembly chamber;
a drum assembly adapted to mount to an other side of the wheel opposite said plunger assembly, said drum assembly including a drum housing and a drum wear unit in said drum housing, said drum wear unit open towards the wheel to receive said brake pad assembly, said drum assembly including an axle opening adapted to receive

an axle for the wheel.

- [c2] 2.The brake system of claim 1, wherein said plunger assembly, brake pad assembly, and drum assembly each include at least one bearing to support the axle for the wheel.
- [c3] 3.The brake system of claim 1, wherein said plunger assembly is mounted in a stationary position and said drum assembly rotates with the wheel.
- [c4] 4.The brake system of claim 1, wherein said plunger housing includes a hydraulic fluid chamber adapted to receive and store fluid to move said plunger and wherein said plunger is positioned in said housing to be moved by the fluid.
- [c5] 5.The brake system of claim 4, wherein said hydraulic fluid chamber includes a post to receive said plunger and wherein said plunger includes an opening to allow placement of said plunger over said post, such that said plunger slides along said post.
- [c6] 6.The brake system of claim 5, wherein at least one seal is used between said post and said plunger; wherein at least one seal is used between said plunger and said hydraulic fluid chamber; and wherein said seals allow movement of said plunger in said hydraulic fluid cham-

ber along said post while retaining the fluid in said hydraulic fluid chamber.

[c7] 7.The brake system of claim 4, wherein in said plunger housing includes at least one sealable opening in said hydraulic fluid chamber to allow for pushing said plunger out of said hydraulic fluid chamber.

[c8] 8.The brake system of claim 1, wherein said plunger housing includes at least one brake pad assembly guide inside said brake pad assembly chamber to guide movement of said brake pad assembly.

[c9] 9.The brake system of claim 8, wherein said brake pad assembly includes a guide groove for each of said at least one brake pad assembly guide to interact with said at least one brake pad assembly guide.

[c10] 10.The brake system of claim 1, wherein said plunger housing includes a lip to be pressed into a bearing in the wheel.

[c11] 11.The brake system of claim 1, wherein said brake pad assembly includes a brake head and at least one brake pad attached to said brake head.

[c12] 12.The brake system of claim 11, wherein said brake head is removably attached to a slide body, said slide

body being in contact with said plunger for movement of said brake pad assembly.

- [c13] 13.The brake system of claim 11, wherein said brake head is coned shaped where said at least one brake pad is attached.
- [c14] 14.The brake system of claim 11, wherein said brake head includes a spring cavity to receive said spring.
- [c15] 15.The brake system of claim 1, wherein said drum housing includes ventilation holes from an outside surface of said drum housing to said drum wear unit.
- [c16] 16.The brake system of claim 1, wherein said drum wear unit is removable.
- [c17] 17.The brake system of claim 1, wherein said drum wear unit includes a cone shaped brake surface cavity to receive said brake pad assembly.
- [c18] 18.The brake system of claim 1, wherein said drum housing includes a collar for attachment of said drum assembly to the wheel.
- [c19] 19.The brake system of claim 18, wherein said collar is removably attached to said drum housing.
- [c20] 20.The brake system of claim 1, wherein said drum wear

unit includes ventilation holes from an outside surface of said drum wear unit to a brake surface cavity in said drum wear unit, said brake surface cavity configured to receive said brake pad assembly.

[c21] 21.The brake system of claim 1, wherein said drum wear unit includes a spring area to receive said spring.

[c22] 22.The brake system of claim 1, wherein said plunger housing includes at least two brake pad assembly guides inside said brake pad assembly chamber to guide movement of said brake pad assembly.

[c23] 23.The brake system of claim 22, wherein said brake pad assembly includes a guide groove for each of said at least two brake pad assembly guides to interact with said at least two brake pad assembly guides.